Typical Projects:

Sensor Nodes for
Nuclear Nonproliferation,
Energy Harvesting for
Wireless Sensing,
Sensory Substitution,
Multi-rotor Damage Detection,
Drill Vibration Reduction,
Laser Ultrasonics for
Non Destructive Evaluation

2014 Lecture Topics:

Modeling Dynamics Systems
Signal Processing
System Identification
Controls
Embedded systems
Aerospace Systems
Robotics
Structural Health Monitoring
Thinking Telescopes
Machine Learning

Los Alamos Dynamics Summer School
June 8-August 7, 2015

About Los Alamos:

Los Alamos sits at an elevation of about 7,500 feet above sea level with a temperate mountain climate lending itself to a multitude of outdoor activities including skiing, rock climbing, hiking, and rafting. Our population is roughly 18,000 and booms each summer with the influx of almost 1000 students coming to experience a Los Alamos Lab internship. Just half an hour from Santa Fe, a city known for it's arts, entertainment, and Southwestern Culture, Los Alamos offers a beautiful setting for exceptional science.

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Los Alamos NATIONAL LABORATORY EST. 1943

Engineering Institute

LANL • UCSD

EI

The 16th Los Alamos Dynamics Summer School

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The 16th Los Alamos Dynamics Summer School

Purpose: The Los Alamos Dynamics Summer School seeks to focus a select group of upper-level undergraduate students and first year graduate students on the multi-disciplinary field of cyber-physical systems (CPS) as defined by the National Science Foundation, "CPS are engineered systems that are built from and depend upon the synergy of computational and physical components."

Focus areas: The multi-disciplinary nature of research in CPS will be emphasized throughout the summer school through tutorials guest lectures, tours, and research projects. Students will be assigned to multi-disciplinary teams working with a Los Alamos Lab mentor on a research topic with both analytical and experimental components.

1. Tutorials and Guest Lectures: Attend weekly tutorials and lectures with world class experts on various aspects of CPS (signal processing, system identification, embedded systems, and machine learning). Students will apply tutorial concepts as they design, build, and test cyber-physical systems to address pertinent research questions.
2. Projects: Students are placed into 3 person, multi-disciplinary teams and assigned a research activity to be completed in an intense 9 week time frame. The goal is for the students to document and present their results at the annual IMAC conference.
3. Tours: Students visit unique Los Alamos Lab research facilities including DAHRT, LANCSE, and the Metropolis Center.

Students:

The program is designed for 15 upper division, undergraduate students or first-year graduate students. The selection committee seeks to identify high quality students from diverse academic and cultural backgrounds. Acceptance into the program is based primarily on academic record and letters of recommendation. As a general guideline, applicants should have sufficient academic achievement that they are, or will be, eligible for graduate school. A variety of academic disciplines are being sought, including aerospace, mechanical or electrical engineering, computer science, mathematics/statistics, computer science and neuroscience. In lieu of salaries, the students will be provided with a fellowship intended to also cover travel and housing expenses. Fellowship amounts range from $7000 to $10,500, depending on academic status and the point of origin for the student's travel to Los Alamos. This program is limited to US citizens.

Hybrid Structural Health Monitoring Team

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How to Apply:
Students should send an email with the following documents to ladss@lanl.gov.

1. **1-page cover letter** describing their interest in this summer school and multi-disciplinary cyber-physical dynamic systems research as well as your near term (1-3 year) academic and professional goals
2. **Resume**
3. **Official transcripts** (a copy is fine for application purposes, but the original will be needed prior to the start of the summer school)
4. At least **one letter of recommendation**

Applications must be received by
Dec. 19, 2014.

Acceptance notifications will be sent by
January 9, 2014.

Questions?
Please contact ladss@lanl.gov,
Chuck Farrar at farrar@lanl.gov, or
David Mascarenas dmascarenas@lanl.gov

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